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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/512,410

10/25/2004

Susumu Hoshi

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4613

22852

7590

01/23/2009

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EXAMINER

MULLIS, JEFFREY C

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/512,410	<b>Applicant(s)</b> HOSHI ET AL.	
	<b>Examiner</b> Jeffrey C. Mullis	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moczygemba (US 5,227,419).

Patentees in run 2 in column 9, lines 6 et seq and elsewhere discloses a process in which styrene/diene block copolymers having greater than 60% styrene are produced using alkyl lithium initiators and having blocks produced from pure charges of styrene and other blocks produced from mixed charges of styrene/diene containing predominately styrene in the presence of randomizer. Since the applicants specification produces block copolymers having applicants characteristics by processes also having the above features it would reasonably appear that applicants and patentees materials

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inherently have identical characteristics. Use of applicants stabilizers are disclosed at column 5, lines 7-17. Sheets are produced at column 8, lines 10-11.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al., 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toya et al. (US 6,107,411).

Patentees in example "P4" (column 10, line 5 et seq) disclose a block copolymer in which styrene is polymerized using an alkyl lithium initiator in the presence of a randomizer following which mixed charges of styrene/diene are polymerized in which high ratios of styrene/diene are used and in which the calculated molecular weight of the homopolystyrene block resulting from polymerization of the pure styrene charge is less than 35,000. Isoprene may be used as diene at the paragraph bridging columns 2 and 3. Applicants' lubricants and stabilizers may be added in applicants amounts at

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column 8, lines 5-20. Since applicants produce their materials in a similar manner in their specification examples, identical characteristics are assumed inherent.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

The above US patent is equivalent to EP '240, newly cited by applicants

Claims 1-12 and 14-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Guntherberg, (US 6,162,867), newly cited by applicants.

Patentees in column 13, lines 27 et seq disclose a block copolymer in which styrene is polymerized using an alkyl lithium initiator in the presence of a randomizer following which mixed multiple charges of styrene/diene are polymerized in which high ratios of styrene/diene are used and in which the calculated molecular weight of the homopolystyrene block resulting from polymerization of the pure styrene charge is less than 35,000. Isoprene may be used as the diene in patent claim 9. Lubricants may be added at column 11, lines 54-64. Since applicants produce their materials in a similar manner in their specification examples, identical characteristics are assumed inherent.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis

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exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Claims 1-25 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsui et al. (WO 02/38642).

It is noted that US 2004/0102576 is equivalent to the WO '642 patent and as US '576 is in English, US '576 will be referred to.

Matsui in Example 8 on page 12 disclose a block copolymer in which styrene is polymerized using an alkyl lithium initiator in the presence of a randomizer following which mixed multiple charges of styrene/diene are polymerized in which high ratios of styrene/diene are used and in which the calculated molecular weight of the homopolystyrene block resulting from polymerization of the pure styrene charge is less than 35,000. Isoprene may be used as diene in paragraph 83 and fatty acid lubricant may be used at paragraph 109. Since applicants produce their materials in a similar manner in their specification examples, identical characteristics are assumed inherent.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Applicant's arguments filed 10-28-08 have been fully considered but they are not persuasive.

With regard to applicants detailed analysis of Moczygemba '419, the examiner again points out that applicants assumptions and methodology for calculating characteristics of block rate, peak molecular weight and amount of block polystyrene of 35,000 molecular weight or less when applied to their own examples are in gross disagreement with results reported in the instant specification. For instance applying applicants reasoning, block copolymer A-1 of Table 1 should have a block rate of 17.5% (in that 80 parts total styrene is added while only one pure charge of 14 parts styrene is used) while Table 1 reports a block rate of 52%. Similarly only one block copolymer species contains a homopolystyrene block (the block generated subsequent to addition of 0.3 eq of methanol) and only 1 block of molecular weight of about 28,000 should have been generated, not a block of 12000 and another of 70000 with 100% of the block styrene having a molecular weight of less than 35,000, not 63. The examiner believes that possibly applicants assumption that "random" blocks do not form any polystyrene blocks with DP of 30 or more as set out in the last complete paragraph of page 8 of their remarks may be incorrect despite the fact that truly random polymerization of butadiene and styrene even in a mixture of 90% styrene and 10%

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butadiene would not produce a  $dp=30$  homopolystyrene chain very often. It is known in the art that copolymeric blocks of styrene/butadiene produced in the presence of randomizer which are often referred to as "random" in fact often contain some blockiness. Note in this regard Bening et al. and especially paragraphs 7 and 8 in this regard. Whether the examiner is correct about the reasons for the structural characteristics reported in applicants' Table 1, such characteristics are in contradiction to applicants assumptions and methodology on which their arguments regarding the characteristics of the prior art are based and explanation is needed as to why for instance applicants material "A-1" has the block rate, peak molecular weight and block copolymer of less than 35000 molecular weight reported in Table 1. It is noted that Moczygemba does not even refer to their copolymeric blocks as "random" but rather refers to them as "tapered" and it is therefore even more likely that blocks of homopolystyrene with DP greater than 30 would be generated than in applicants examples and in fact only a small portion of the tapered block would have to contain homopolystyrene sequences given that the calculated (as calculated by applicants at page 11, lines 4-5 of their remarks) proportion of homopolystyrene blocks of molecular weight of less than 35,000 is already 38%. All of the prior art produces styrene/diene block copolymers by anionic polymerization and contain copolymeric blocks of styrene/diene with high styrene content produced by polymerization in the presence of randomizer and having applicants vinyl aromatic content. It therefore reasonably appears that applicants characteristics are inherent in the prior art relied upon. With regard to Toya '411, even assuming that the examiner is incorrect regarding "P4",



Example "P12" in Table 4 has a calculated "A" block (containing less than 20 percent of the total block copolymer styrene charge) molecular weight of about 80,000. Applicants appear to be correct that US 6,841,261 corresponds to US 2004/10102576 and are also correct that the weight ratio of vinyl aromatic hydrocarbon and conjugated diene is outside the scope of the claims in Example 23 (as it is admittedly for most of the examples in '261 equivalent to 2004/0102576). Nonetheless the product of reference Example 8 does contain applicants' ratios of vinyl aromatic and diene monomer. While this block copolymer has two terminal sequences of homopolystyrene arising from addition of the first and last charge of pure styrene polymer with a calculated molecular weight of about 45,000 assuming as applicants have that the polystyrene blocks only arise from the pure charges of styrene monomer, again applicants own data indicate that the assumption that block polystyrene arises solely from pure styrene charges is inaccurate.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Jeffrey C.

Mullis M-F, 9-5 pm at telephone number 571 272 1075.

Jeffrey C. Mullis  
Primary Examiner  
Art Unit 1796

JCM

1-20-09

/Jeffrey C. Mullis/

Primary Examiner, Art Unit 1796